CLAIMS

What is claimed is:

1. A program storage medium readable by a computer, tangibly embodying a software program executable by the computer to perform method steps for specifying a topological map, wherein the topological map describes the connectivity of nodes on a network, said steps comprising:

when a first node is detected on a first port of a first switching device, wherein both the first node and the first switching device are connected to the network:

when a second node was previously detected on the first port, specifying the topology of a bus segment, wherein the bus segment comprises the first node, the second node, and the first port interconnected via the bus structure;

otherwise, when the first node is a second port located on a second switching device, specifying the topology of a serial segment, wherein the serial segment comprises the second port connected to the first port;

otherwise, specifying the topology of a star segment, wherein the star segment comprises the first node connected to the first port.

2. The program storage medium as recited in claim 1, wherein first and second nodes are electronic devices.

3. The program storage medium as recited in claim 1, wherein first and

second switching devices are electronic devices selected from the group consisting of repeaters, hubs, routers, bridges, and switches.

4. The program storage medium as recited in claim 1, wherein the star segment further comprises a third node connected to a third port located on the first switching device.

5. The program storage medium as recited in claim 1, wherein the method step specifying the topology of the bus segment comprises:

when the bus segment is absent, creating the bus segment;

when the serial segment exists:

transferring the second node and the first port to the bus segment; and

deleting the serial segment;

transferring the first node to the bus segment;

when previously created star segment comprises the first node prior to transferring the first node to the bus segment and when the previously created star segment is empty after transferring the first node to the bus segment, deleting the previously created star segment.

6. The program storage medium as recited in claim 1, wherein the method step specifying the topology of the serial segment comprises:

when the serial segment is absent, creating the serial segment, transferring

the first node to the serial segment.

7. The program storage medium as recited in claim 1, wherein the method step specifying the topology of the star segment comprises:

when the star segment is absent, creating the star segment, transferring the first node to the star segment.

8. A computer operable method for specifying a topological map, wherein the topological map describes the connectivity of nodes on a network, comprising the steps of:

when a first node is detected on a first port of a first switching device, wherein both the first node and the first switching device are connected to a network:

when a second node was previously detected on the first port, specifying the topology of a bus segment, wherein the bus segment comprises the first node, the second node, and the first port interconnected via the bus structure;

otherwise, when the first node is a second port located on a second switching device, specifying the topology of a serial segment, wherein the serial segment comprises the second port connected to the first port;

otherwise, specifying the topology of a star segment, wherein the star segment comprises the first node connected to the first port.

9. The computer operable method as recited in claim 8, providing first and

second nodes are electronic devices.

10. The computer operable method as recited in claim 8, providing first and second switching devices are electronic devices selected from the group consisting of repeaters, hubs, routers, bridges, and switches.

11. The computer operable method as recited in claim 8, providing the star segment further comprises a third node connected to a third port located on the first switching device.

12. The computer operable method as recited in claim 8, the method step specifying the topology of the bus segment comprising:

when the bus segment is absent, creating the bus segment:

when the serial segment exists:

transferring the second node and the first port to the bus segment; and

deleting the serial segment;

transferring the first node to the bus segment;

when previously created star segment comprises the first node prior to transferring the first node to the bus segment and when the previously created star segment is empty after transferring the first node to the bus segment, deleting the previously created star segment.

13. The computer operable method as recited in claim 8, the method step

specifying the topology of the serial segment comprising:

when the serial segment is absent, creating the serial segment, transferring the first node to the serial segment.

14. The computer operable method as recited in claim 8, the method step specifying the topology of the star segment comprising:

when the star segment is absent, creating the star segment, transferring the first node to the star segment.

15. A topological map for describing the connectivity of nodes on a network, comprising:

at least one map segment, wherein the map segment is,

when a first node and a second node are both connected to a first port on a first switching device, a bus segment wherein the bus segment comprises a map representation of the first node, the second node, and the first port connected via the bus structure; and

otherwise, when the first port on the first switching device is connected to a second port on a second switching device, a serial segment, wherein the serial segment comprises the map representation of the first port connected to the second port;

otherwise, when the first node is connected to the first port on the first switching device, a star segment, wherein the star segment comprises the map representation of the first node connected to

the first port.

16. The topological map as recited in claim 15, wherein first and second nodes are electronic devices.

17. The topological map as recited in claim 15, wherein first and second switching devices are electronic devices selected from the group consisting of repeaters, hubs, routers, bridges, and switches.

18. The topological map as recited in claim 15, wherein the star segment further comprises a third node connected to a third port located on the first switching device.